PARIS.

Academy of Sciences, February 19.—M. Lippmann in the chair.—L. **Guignard**: Notice on the life and work of Edouard Bornet.—A. **Lacroix**: The volcanoes of Central Madagascar. The Ankaratra *massif*. The products of the Ankaratra volcanoes cover an area of not less than 4000 square kilometres. The petrographical constitution has been investigated, and is found to be much more complex than that sketched by Baron.—A. **Müntz** and E. **Lainé**: The quantity of water and frequence of watering as depending on the physical properties of soils. It is very essential that any irrigation scheme should be preceded by a careful study of the soils on which the water is to be placed. Cases are cited in which, owing to the lack of permeability of the soil, irrigation has been actually harmful to the land.—M. du **Ligondès**: The condensation of the solar nebula in the Laplace hypothesis. The enormous condensation necessary, according to the Laplace hypothesis, to the formation of Neptune has been pointed out by Fouché; the author shows that there is also a discontinuity in the condensation between Jupiter and Mars.—**Billon-Daguerre**: The fusion of pure quartz. A description of the electric furnace used for fusing quartz, and obtaining a clear, transparent product.—P. Th. **Muller** and Mlle. V. **Guerdjikoff**: Refraction and magnetic rotation of mixtures. H. Becquerel has shown that for pure substances there is a connection between the refractive index and the magnetic rotation; for solutions, however, there would appear to be no general relation between these two magnitudes.—Paul **Joye** and Charles **Garnier**: Contribution to the study of neodymium compounds. The different spectra given by neodymium hydroxide heated to temperatures between 300° and 700° C. are shown to correspond to the formation of definite hydrates.—A. **Portevin** and G. **Arnou**: The effects of reheating aluminium bronzes. Measurements are given of the alteration of hardness produced, and photographs reproduced showing the change in the structure of the alloys.—Daniel **Berthelot** and Henry **Gaudechon**: The photolytic decomposition of smokeless powder, of picric acid, and of ammonium picrate by the ultra-violet rays. The gas in which the smokeless powder is exposed to the rays is shown to have an influence on the nature and amount of the gaseous decomposition products.—H. **Masson**: The principal constituents of essence of labdanum. Two ketones were isolated from this oil, 1 : 5 : 5-trimethyl-6-hexanone and acetophenone; the latter substance has not been previously noticed as a constituent of an essential oil.—A. **Prunet**: The Japanese chestnut at the experimental station at Lindois (Clarente). Experiments have been carried out on the disease-resisting properties of various chestnuts, and the Japanese chestnut (*Castinea japonica*) has been found to be the most suitable tree to replace the chestnuts destroyed by the *maladie de l'encre*.—A. **Demolon**: The fertilising action of sulphur. Sulphur has been shown by direct experiment to be beneficial to plant growth, especially Cruciferæ. It appears to exert a favourable action upon the development of chlorophyll, since during drought the plants on the plots treated with sulphur did not turn as yellow as the untreated control plots.—Em. **Bourquelot** and Mlle. A. **Fichtenholz**: The identification of the glucoside from the leaves of *Kalmia latifolia* with asebotine. Eykman in 1883 gave the name asebotine to a glucoside extracted from the leaves of *Andromeda japonica*; the glucoside extracted from the leaves of *Kalmia latifolia* is shown to be identical with asebotine.—**Michel-Cohendy**: Experiments on life without micro-organisms. Although normally provided with a rich microbial flora, the chicken can live absolutely without micro-organisms, and this aseptic life does not prejudice growth or development in any way. According to these experiments, the theory of the necessary connection between the animal and its bacteria, a principle which has been given as a well-established biological law, is not in accord with facts.—P. **Armand-Delille**, A. **Mayer**, G. **Schaeffer**, and E. **Terroine**: The culture of the Koch bacillus in a definite chemical medium. A formula is given for a culture medium containing definite chemical compounds only. On such a medium it is found that the tubercle bacillus develops perfectly, rapidly, and abundantly, retaining all its morphological and biological characters.—A. **Moutier**: The measurement of the arterial elasticity in clinical practice. The measurement of arterial elasticity cannot be carried out with an apparatus using circular compression, only those using localised compression giving correct results. Bloch's sphygmometer is the best instrument at present available.

BOOKS RECEIVED.

Expédition Antarctique Française (1903–1905), Commandée par le Dr. Jean Charcot. Hydrographie Physique du Globe. By Lieuts. A. Matha and J. J. Rey. Pp. vi+619. (Paris: Gauthier-Villars.)

Botany, or the Modern Study of Plants. By Dr. M. Stopes. Pp. 94. Heredity. By J. A. S. Watson. Pp. 94. The Science of the Stars. By E. W. Maunder. Pp. 95. The Principles of Electricity. By N. R. Campbell. Pp. 91. Organic Chemistry. By Prof. J. B. Cohen, F.R.S. Pp. 96. Each in "The People's Books." (London and Edinburgh: T. C. and E. C. Jack.) 6*d*. net each.

Colour-music: the Art of Mobile Colour. By Prof. A. W. Rimington. Pp. xx+185. (London: Hutchinson and Co.) 6*s*.

Butterfly-hunting in Many Lands: Notes of a Field Naturalist. By Dr. G. B. Longstaff. Pp. xviii+728. (London: Longmans and Co.) 21*s*. net.

Types of Ore Deposits. Edited by H. F. Bain. Pp. 378. (San Francisco: Mining and Scientific Press; London: The Mining Magazine.) 8*s*. 6*d*. net.

Graphical Solution of Fault Problems. By C. F. Tolman, jun. Pp. 43. (San Francisco: Mining and Scientific Press; London: The Mining Magazine.) 4*s*. 6*d*. net.

The Seven Follies of Science. By J. Phin. Third edition. Pp. ix+231. (London: Constable and Co., Ltd.) 5*s*. net.

Direct and Alternating Current Manual. By Drs. F. Bedell and C. A. Pierce. Second edition. Pp. xiii+360. (London: Constable and Co., Ltd.) 8*s*. net.

Railway Signal Engineering (Mechanical). By L. P. Lewis. Pp. xviii+358. (London: Constable and Co., Ltd.) 8*s*. net.

An Introduction to the Study of Fuel. By Dr. F. J. Brislee. Pp. xxii+269. (London: Constable and Co., Ltd.) 8*s*. 6*d*. net.

A Treatise on the Analytic Geometry of Three Dimensions. By Dr. G. Salmon, F.R.S. Revised by R. A. P. Rogers. Fifth edition, in two volumes. Vol. i. Pp. xxii+470. (London: Longmans and Co.; Dublin: Hodges, Figgis and Co., Ltd.) 9*s*.

Common Land and Inclosure. By Prof. E. C. K. Gonner. Pp. xxx+461. (London: Macmillan and Co., Ltd.) 12*s*. net.

Principles of Human Nutrition. By W. H. Jordan. Pp. xxi+450. (London: Macmillan and Co., Ltd.) 7*s*. 6*d*. net.

Laboratory Problems in Physics. By F. T. Jones and R. R. Tatnall. Pp. ix+81. (London: Macmillan and Co., Ltd.) 2*s*. 6*d*.

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Monographien einheimischer Tiere. Band iii. Hydra und die Hydroiden, zugleich eine Einführung in die experimentelle Behandlung biologischer Probleme an niederen Tieren. By Dr. O. Steche. Pp. vi+162. Band iv. Die Weinbergschnecke. *Helix pomatia*, L. By Prof. J. Meisenheimer. Pp. iv+140. (Leipzig: Dr. W. Klinkhardt.) Each, 4 marks.

A History of British Mammals. By G. E. H. Barrett-Hamilton. Part x. Pp. 169–216. (London: Gurney and Jackson.) 2*s*. 6*d*. net.

Indian Chronography. By R. Sewell. Pp. xii+187. (London: G. Allen and Co., Ltd.) 31*s*. 6*d*. net.

A History of the Birds of Colorado. By W. L. Sclater. Pp. xxiv+576. (London: Witherby and Co.) 21*s*. net.

Are there Equinoctial Storms? Development of the Marine Barometer in American Waters. By J. H. Morrison. Pp. 21+30. (New York: W. F. Sametz and Co.)

Synthese der Zellbausteine in Pflanze und Tier. By Prof. E. Abderhalden. Pp. xi+128. (Berlin: J. Springer.) 3.60 marks.

Filariasis and Elephantiasis in Fiji: being a Report to the London School of Tropical Medicine. By P. H. Bahr. Pp. viii+192. (London: Witherby and Co.) 6*s*. net.

Fergusson's Percentage Unit of Angular Measurement, with Logarithms; also a Description of his Percentage Theodolite and Percentage Compass. By J. C. Fergusson. Pp. lxvii+467. (London: Longmans and Co.) 3*l*. 3*s*. net.

Milk and the Public Health. By Dr. W. C. Savage. Pp. xviii+459. (London: Macmillan and Co., Ltd.) 10*s*. net.

Leisure Hours with Nature. By E. P. Larken. Pp. xv+263. (London: T. Fisher Unwin.) 2*s*.

Pflanzengeographische Monographie des Berninagebietes. By Dr. E. Rübel. Pp. x+615+plates. (Leipzig: W. Engelmann.) 36 marks.

DIARY OF SOCIETIES.

THURSDAY, MARCH 7.

ROYAL SOCIETY, at 4.30.—(1) On the Devitrification of Silica Glass; (2) The Volatility of Metals of the Platinum Group: Sir William Crookes, O.M., For. Sec. R.S.—A Critical Study of Spectral Series. II.—The Principal and Sharp Sequences and the Atomic Volume Term: Prof. W. M. Hicks, F.R.S.—An Optical Load-extension Indicator, together with some Diagrams obtained therewith: Prof. W. E. Dalby.—(1) The Transmission of Cathode Rays through Matter; (2) The Velocity of the Secondary Cathode Particles ejected by the Characteristic Röntgen Rays: R. Whiddington.—On the Voltage Effect in Selenium: E. E. Fournier d'Albe.

LINNEAN SOCIETY, at 8.—Internodes of Calamites: Prof. Percy Groom.—Coloured Drawings of Barbados Plants: Miss Ethel M. Phillips.—On *Psygmophyllum majus*, sp. n., from the Lower Carboniferous Rocks of Newfoundland, together with a Revision of the Genus and Remarks on its Affinities: E. A. Newell Arber.—Historic Doubts about *Vaunthompsonia*: Rev. T. R. R. Stebbing.—Living Specimens of Cactoid Euphorbias from South Africa: Dr. Otto Stapf.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Tariffs for Electrical Energy, with Particular Reference to Domestic Tariffs: W. W. Lackie.

FRIDAY, MARCH 8.

ROYAL ASTRONOMICAL SOCIETY, at 5.—The Long-period Variable RT Cygni: A. N. Brown—The Constitution of the Solar Corona. II.—Coronium: J. W. Nicholson.—On a Device for Facilitating Harmonic Analysis and Synthesis: E. W Brown.—The Nebula HI 159 Cassiopeiæ: Dorothea Roberts.—The Real Paths of 420 Fireballs and Shooting Stars Observed in the British Isles 1897–1911: W. F. Denning.—Erreurs systématiques et probables dans les mesures d'Étoiles Doubles: R. Jonckheere.—Occultation of B.A.C. 1189 and of Mars: Cambridge Observatory.—Position of Comet Beljawsky (1911*g*): Cambridge Observatory.—On Librations in Planetary and Satellite Systems: E. W. Brown.—The Effect of Atmospheric Dispersion on the Greenwich Photographs of Eros: Royal Observatory, Greenwich.—*Probable Papers*: A Determination of the Frequency Law of Stellar Motions: A. S. Eddington.—A Tentative Explanation of the "Two Star Streams" in Terms of Gravitation: H. H. Turner.

MALACOLOGICAL SOCIETY, at 8.—The Distribution and Habits of Alopia, a Subgenus of Clausilia: Rev. A. H. Cooke.—A Synopsis of the Recent and Tertiary Freshwater Mollusca of the Californian Province. Part I., Pelecypoda and Pulmonata: H. Hannibal.—Note on the Existence of Two Editions of Férussac's Tableaux Systématiques Major M. Conolly. Note on *Pleurotoma bipartita*, Smith: E. A. Smith.

PHYSICAL SOCIETY, at 8.—Exhibition of a "Method of Making Capillary Filaments": H. S. Souttar.—The Intensity at Points near the Principal Focus of an Object Glass with Symmetrical Aberration: J. Walker.—The Equipment of the Spectroscopic Laboratory of the Imperial College of Science: Prof. A. Fowler, F.R.S.

SATURDAY, MARCH 9.

ROYAL INSTITUTION, at 3.—Molecular Physics: Sir J. J. Thomson, F.R.S.

MONDAY, MARCH 11.

ROYAL SOCIETY OF ARTS, at 8.—The Loom and Spindle: Past, Present and Future: Luther Hooper.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Some New Zealand Volcanoes: Dr. J. Mackintosh Bell.

TUESDAY, MARCH 12.

ROYAL INSTITUTION, at 3.—Ancient Britain: Dr. T. R. Holmes.

MINERALOGICAL SOCIETY, at 5.30.—On the Zeolites from Killyflugh and White Head, County Antrim: Dr. G. F. Herbert Smith and F. N. A. Fleischmann.—On Quartz-twins: J. Drugman.—Note on the Optical Properties of Mercuric Iodide: T. V. Barker.—Notes on the Minerals and Mineral Localities of Shropshire: Arthur Russell.

SOCIETY OF DYERS AND COLOURISTS, at 8.—A Note on the Analysis of Weighted Silk: F. J. Farrell and Dr. J. N. Goldsmith.—Paper Yarn: Its Production and Uses: W. P. Dreaper.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Further Discussion*: (1) Roller and Ball Bearings; (2) The Testing of Anti-friction Bearing Metals: Prof. J. Goodman.—*Probable Papers*: The Main Drainage of Glasgow: A. B. McDonald and G. M. Taylor.—The Construction of the Glasgow Main Drainage Works; W. C. Easton.—Glasgow Main Drainage: The Mechanical Equipment of the Western Works and of the Kinning Park Pumping Station: D. H. Morton.

WEDNESDAY, MARCH 13.

GEOLOGICAL SOCIETY, at 8.—On the Glacial Origin of the Clay with Flints of Buckinghamshire and on a Former Course of the Thames: Dr. R. L. Sherlock and A H. Noble.—Some New Lower Carboniferous Gasteropoda: Mrs. Jane Longstaff.

ROYAL SOCIETY OF ARTS, at 8.—Greek Sculpture: Prof. E. A. Gardner.

THURSDAY, MARCH 14.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Effects of Ultra-Violet Rays upon the Eye: Dr. E. K. Martin.—On the Presence of Radium in some Carcinomatous Tumours: Dr. W. S. Lazarus-Barlow.—An Improved Method for Opsonic Index Estimations involving the Separation of Red and White Human Blood Corpuscles: C. Russ.—The Electrical Conductivity of Bacteria, and the Rate of Inhibition of Bacteria by Electric Currents: Prof. W. M. Thornton.—A Critical Study of Experimental Fever: E. C. Hort and W. J. Penfold.—Certain Results of Drying Non-Sporing Bacteria in a Charcoal Liquid Air Vacuum: S G. Shattock and L. S. Dudgeon.

ROYAL SOCIETY OF ARTS, at 4.30.—The Indian Census for 1911: E. A. Gait.

MATHEMATICAL SOCIETY, at 5.30.—The Cubic Surface as a Degenerate Quartic: G. T. Bennett.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.

FRIDAY, MARCH 15.

ROYAL INSTITUTION, at 9.—The Origin of Radium: F Soddy, F.R.S.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—The Diesel Oil Engine, and its Industrial Importance particularly for Great Britain: Dr. Rudolf Diesel.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Heat Value of Fuels: A. E. Gladwyn.

SATURDAY, MARCH 16.

ROYAL INSTITUTION, at 3.—Molecular Physics: Sir J. J. Thomson, F.R.S.

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